

Applicant: Wurz et al.
Application N .: 09/766,815

REMARKS

Claims 2-23 are currently pending in this application. By the foregoing amendment, Applicants have requested that claims 2, 16, 18, and 21 be amended. Specifically, claims 2, 16, 18, and 21 have been amended to recite that the light beam impacts the conveyor at a nonzero angle relative to a perpendicular extending therefrom. Although this amendment is submitted after final, Applicants respectfully submit that its inclusion is proper as the scope of the claims are unchanged and the amendments only clarify Applicants' original intent in claiming an angle relative to a perpendicular. No new matter has been added to the application by this Amendment.

INTERVIEW

Examiner Pham and Applicants' representative discussed the patentability of the claims, as now amended, during a telephone interview on October 2, 2002. In the Office Action of June 18, 2002, Examiner Pham pointed out that the pending claims could be interpreted to include a zero angle relative to a perpendicular. To address this matter and to clarify Applicants' original intent, the claims have been amended to recite a nonzero angle relative to a perpendicular.

Examiner Pham agreed that, subject to a review of the prior art cited in this application, the inclusion of the term "nonzero" should place the claims in condition for

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allowance. It was agreed that the above Amendment would be submitted via facsimile as an amendment after final.

Applicants thank Examiner Pham for the many courtesies extended during the interview.

INVITATION

If the Examiner believes that any additional formal matters need to be addressed to place this application in condition for allowance, the Examiner is respectfully invited to contact the undersigned, by telephone, at the Examiner's convenience.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 2-23, is in condition for allowance and a notice to that effect is respectfully solicited.

Respectfully submitted,

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MARKED UP VERSION OF CLAIMS

2. (Amended Twice) An apparatus for measuring an object on a conveyor having a width, the apparatus comprising:

a chassis;

a mirrored wheel rotatably located on the chassis;

a light source positioned on the chassis and oriented to transmit a light beam in a fixed direction onto the mirrored wheel, wherein when the wheel rotates the light beam is reflected while also being sequentially redirected at one of a plurality of varying angles resulting in the motion of the light beam, which is reflected from the mirrored wheel, defining a path oriented generally perpendicularly to the light beam;

a reflecting surface located on the chassis and oriented to receive the light beam that is reflected off of the mirrored wheel and to redirect the light beam toward the conveyor such that the path defined by the light beam extends generally across the width of the conveyor, wherein the light beam, when not obstructed by the object, impacts the conveyor at [an] a nonzero angle relative to a perpendicular extending therefrom;

a detector disposed on the chassis and having a field of view initially oriented toward the mirrored wheel, wherein the field of view is redirected via the mirrored wheel and the reflecting surface to allow the detector to detect a reflection of the light beam off of one of the conveyor and the object at a plurality of locations as the light beam moves along the path across the conveyor.

16. (Amended) A method of measuring an object on a conveyor, comprising:

emitting a single light beam in a fixed direction;

sequentially reflecting the light beam through a plurality of varying angles causing the motion of the reflected light beam to define a path generally perpendicular to the light beam, wherein the path extends generally across a width of the conveyor, wherein the light beam, when not obstructed by the object, impacts the conveyor at [an] a nonzero angle relative to a perpendicular extending therefrom;

detecting the reflection of the reflected light beam off of one of the object and the conveyor at a plurality of locations along the path; and

determining a height profile, relative to the conveyor, along the path.

18. (Amended Twice) A method for determining the dimensions of one or more objects on a conveyor, comprising the steps of:

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directing at least one light beam onto the conveyor at a plurality of locations along the path;

detecting reflections caused by the at least one light beam striking one of the conveyor and the object, wherein the light beam, when not obstructed by the object, impacts the conveyor at [an] a nonzero angle relative to a perpendicular therefrom;

collecting time and location data associated with the detected reflections; and
generating a height-profile, relative to a conveyor surface, along the path.

21. (Amended) An apparatus for measuring an object on a conveyor having a width, the apparatus comprising:

at least one light source positioned above the conveyor and adapted to transmit a light beam that when not obstructed by the object, impacts the conveyor at [an] a nonzero angle relative to a perpendicular extending therefrom, wherein the light beam impacts the conveyor at a separate one of a plurality of locations along a path extending across the width of the conveyor;

a detector disposed proximate to the conveyor and having a field of view, the field of view, when not obstructed by the object, intersects the conveyor along the perpendicular, the field of view is adapted to allow the detector to detect a reflection of the light beam off of one of the conveyor and the object at the separate one of the plurality of locations.